

Amendment and Response
Applicant: Gopalan Raman
Serial No.: 10/789,040
Filed: February 27, 2004
Docket No.: 200400043-1
Title: FLUID EJECTION DEVICE

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REMARKS

The following Remarks are made in response to the Non-Final Office Action mailed October 6, 2006, in which claims 1-23 and 43-50 were rejected.

With this Amendment, claims 51-57 have been added, and claims 1, 11, 13, 19, 20, and 21 have been amended to clarify Applicant's invention.

Claims 1-23 and 43-57, therefore, remain pending in the application and are presented for reconsideration and allowance.

Claims Objections

Claim 45 is objected to because of informalities. More specifically, the Examiner contends that claim 45 covers the exact same limitations of claim 11.

Claim 48 is objected to because of informalities. More specifically, the Examiner contends that claim 48 covers the exact same limitations of claim 21.

Applicant notes that claims 11 and 21 are independent claims, and that claims 45 and 48 are dependent claims depending directly or indirectly from respective independent claims 1 and 13. The limitations of independent claims 11 and 21, however, do differ from the limitations of independent claims 1 and 13.

Nevertheless, with this Amendment, independent claim 11 has been amended to clarify that "a length of the first fluid channel along the first peninsula is substantially parallel with a length of the second fluid channel along the second peninsula," and independent claim 21 has been amended to clarify that the fluid ejection device includes "a first sidewall extended between the first peninsula and the chamber along the first fluid channel and a second sidewall extended between the second peninsula and the chamber along the second fluid channel," wherein "the first sidewall as provided along the first fluid channel is oriented substantially parallel with the first chamfered corner as provided along the first fluid channel, and the second sidewall as provided along the second fluid channel is oriented substantially parallel with the second chamfered corner as provided along the second fluid channel."

Applicant, therefore, submits that the limitations of claims 11 and 21 differ from the limitations of claims 45 and 48. Applicant, therefore, respectfully requests that the objections to claims 45 and 48 be reconsidered and withdrawn.

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Claim Rejections under 35 U.S.C. § 102 and 35 U.S.C. § 103

Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Raman US Patent No. 5,912,685.

Claims 11 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raman US Patent No. 5,912,685.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raman US Patent No. 5,912,685 in view of Pidwerbecki et al. US Patent No. 6,161,923.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raman US Patent No. 5,912,685 in view of Burke et al. US Patent No. 5,666,143.

Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raman US Patent No. 5,912,685 in view of Pidwerbecki et al. US Patent No. 6,161,923.

Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raman US Patent No. 5,912,685 in view of Burke et al. US Patent No. 5,666,143.

With this Amendment, independent claim 1 has been amended to clarify that **"the first sidewall is oriented at a first angle to the chamber and the second sidewall is oriented at a second angle to the chamber, wherein an absolute value of the second angle is less than an absolute value of the first angle."**

With this Amendment, independent claim 11 has been amended to clarify that **"a length of the first fluid channel along the first peninsula is substantially parallel with a length of the second fluid channel along the second peninsula."**

With respect to the Raman, Pidwerbecki, and Burke patents, Applicant submits that these patents, individually or in combination, do not teach or suggest a fluid ejection device as claimed in independent claim 1, and do not teach or suggest a fluid ejection device as claimed in independent claim 11. For example, the Raman patent discloses an inkjet printer printhead which employs two ink feed channels to couple an ink firing chamber to the source of ink (see, e.g., Abstract). In the embodiment of FIG. 3 of the Raman patent, the ink feed channels approach the ink firing chamber at an angle of 45 degrees, and in the embodiment of FIG. 4 of the Raman patent, the ink feed channels approach the ink firing chamber at a steeper angle (relative to a line parallel to a back wall of the ink feed chamber) of 60 degrees (see FIGS. 3 and 4; col. 6, line 64 - col. 7, line 3). In the embodiment of FIG. 3 of the Raman

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patent and the embodiment of FIG. 4 of the Raman patent, however, both ink feed channels of the respective embodiment approach the ink firing chamber at the same angle. In addition, the ink feed channels of the Raman patent are angled relative to each other (see FIGS. 3 and 4). The ink feed channels of the Raman patent, however, are not oriented parallel to each other.

Accordingly, Applicant submits that the Raman patent does not teach or suggest a fluid ejection device as claimed in independent claim 1 including a first sidewall oriented at a first angle to the chamber and a second sidewall oriented at a second angle to the chamber, wherein an absolute value of the second angle is less than an absolute value of the first angle, and does not teach or suggest a fluid ejection device as claimed in independent claim 11 wherein a length of a first fluid channel along a first peninsula is substantially parallel with a length of a second fluid channel along a second peninsula.

In view of the above, Applicant submits that independent claims 1 and 11 are each patentably distinct from the Raman, Pidwerbecki, and Burke patents and, therefore, are each in a condition for allowance. Furthermore, as dependent claims 2-8 and 43-46 further define patentably distinct claim 1, and dependent claims 9-12 and 51 further define patentably distinct claim 11, Applicant submits that these dependent claims are also in a condition for allowance. Applicant, therefore, respectfully requests that the rejections of claims 1-8 under 35 U.S.C. 102(b), and claims 11 and 45, claims 9 and 10, claim 12, claims 43 and 44, and claim 46 under 35 U.S.C. 103(a) be reconsidered and withdrawn, and that claims 1-12, 43-46, and 51 be allowed.

Claims 13-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Burke et al. US Patent No. 5,666,143.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al. US Patent No. 5,666,143 in view of Raman et al. US Patent No. 5,912,685

Claims 21, 47, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al. US Patent No. 5,666,143.

Claims 22, 23, 49, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al. US Patent No. 5,666,143 in view of Pidwerbecki et al. US Patent No. 6,161,923.

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With this Amendment, independent claim 13 has been amended to clarify that **"the island is substantially rectangular and has a first side and a first chamfered corner each along the first fluid channel, and a second side and a second chamfered corner each along the second fluid channel, wherein the first chamfered corner is oriented at a first angle and the second chamfered corner is oriented at a second angle less than the first angle," and wherein "a width of the first fluid channel along the first side of the island is substantially constant, and a width of the second fluid channel along the second side of the island is substantially constant."**

With this Amendment, independent claim 21 has been amended to clarify that the fluid ejection device includes **"a first sidewall extended between the first peninsula and the chamber along the first fluid channel and a second sidewall extended between the second peninsula and the chamber along the second fluid channel"** wherein **"the first sidewall as provided along the first fluid channel is oriented substantially parallel with the first chamfered corner as provided along the first fluid channel, and the second sidewall as provided along the second fluid channel is oriented substantially parallel with the second chamfered corner as provided along the second fluid channel."**

With respect to the Burke, Raman, and Pidwerbecki patents, Applicant submits that these patents do not teach or suggest a fluid ejection device as claimed in independent claim 13, and do not teach or suggest a fluid ejection device as claimed in independent claim 21. For example, the Burke et al. patent discloses an inkjet printer printhead with two ink feed channels coupled to one ink firing chamber and an island separating one ink feed channel from the other ink feed channel (see, e.g., FIG. 5; Abstract). In this regard, the Burke et al. patent asserts that "[i]t is an important feature of the present invention that the walls of the ink feed channels are not parallel but converge from the inlet to the outlet as the ink flows from the ink source to the firing chamber" (col. 5, lines 15-19). As the ink feed channels of the Burke et al. patent converge from the inlet to the outlet as the ink flows from the ink source to the firing chamber, a width of the ink feed channels of the Burke et al. patent is not constant. In addition, sidewalls of the ink feed channels of the Burke et al. patent are not oriented parallel with respective chamfered corners of the island.

Accordingly, Applicant submits that the Burke et al. patent does not teach or suggest a fluid ejection device as claimed in independent claim 13 wherein the island is substantially

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rectangular and has a first side and a first chamfered corner each along the first fluid channel, and a second side and a second chamfered corner each along the second fluid channel, wherein the first chamfered corner is oriented at a first angle and the second chamfered corner is oriented at a second angle less than the first angle, and wherein a width of the first fluid channel along the first side of the island is substantially constant, and a width of the second fluid channel along the second side of the island is substantially constant, and does not teach or suggest a fluid ejection device as claimed in independent claim 21 including a first sidewall extended between a first peninsula and the chamber along the first fluid channel and a second sidewall extended between a second peninsula and the chamber along the second fluid channel, wherein the first sidewall as provided along the first fluid channel is oriented substantially parallel with the first chamfered corner as provided along the first fluid channel, and the second sidewall as provided along the second fluid channel is oriented substantially parallel with the second chamfered corner as provided along the second fluid channel.

In view of the above, Applicant submits that independent claims 13 and 21 are each patentably distinct from the Burke, Raman, and Pidwerbecki patents and, therefore, are each in a condition for allowance. Furthermore, as dependent claims 14-20 and 48-50 further define patentably distinct claim 13, and dependent claims 22, 23, 47, and 52 further define patentably distinct claim 21, Applicant submits that these dependent claims are also in a condition for allowance. Applicant, therefore, respectfully requests that the rejections of claims 13-19 under 35 U.S.C. 102(b), and claim 20, claims 21, 47, and 48, and claims 22, 23, 49, and 50 under 35 U.S.C. 103(a) be reconsidered and withdrawn, and that claims 13-23, 47-50, and 52 be allowed.

New Claims

With this Amendment, Applicant has added new claims 53-57 with claim 53 being independent and claims 54-57 depending therefrom. Independent claim 53 recites, amongst other things, "wherein the island is substantially rectangular and has a first side and a first chamfered corner each along the first fluid channel, and a second side and a second chamfered corner each along the second fluid channel, wherein the first chamfered corner is oriented at a first angle and the second chamfered corner is oriented at a

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second angle different from the first angle," and "wherein the first peninsula as provided along the first fluid channel is oriented substantially parallel with the first side of the island as provided along the first fluid channel, and the second peninsula as provided along the second fluid channel is oriented substantially parallel with the second side of the island as provided along the second fluid channel."

With respect to the Burke, Raman, and Pidwerbecki patents, Applicant submits that these patents, individually or in combination, do not teach or suggest a fluid ejection device as claimed in new independent claim 53. Applicant, therefore, submits that new independent claim 53 is patentably distinct from the Burke, Raman, and Pidwerbecki patents and, therefore, is in a condition for allowance. Furthermore, as dependent claims 54-57 further define patentably distinct claim 53, Applicant submits that dependent claims 54-57 are also in a condition for allowance.

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CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 1-23 and 43-57 are all in a condition for allowance and requests reconsideration of the application and allowance of all pending claims.

Any inquiry regarding this Amendment and Response should be directed to either Donald J. Coulman at Telephone No. 541-715-1694, Facsimile No. 541-715-8581 or Scott A. Lund at Telephone No. (612) 573-2006, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

IP Administration
Legal Department, M/S 35
HEWLETT-PACKARD COMPANY
P.O. Box 272400
Fort Collins, Colorado 80527-2400

Respectfully submitted,

Gopalan Raman,

By,

DICKE, BILLIG & CZAJA, PLLC
Fifth Street Towers, Suite 2250
100 South Fifth Street
Minneapolis, MN 55402
Telephone: (612) 573-2006
Facsimile: (612) 573-2005

Date: Dec. 18, 2006
SAL:hsf


Scott A. Lund
Reg. No. 41,166

CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this paper or papers, as described herein, are being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300 on this 18th day of December, 2006.

By 
Name: Scott A. Lund